SUPPORT FOR THE AMENDMENTS

The amendment to the paragraph beginning on page 7, line 5, corrects an obvious error as the ranges described by the symbols "Δ" and "x" would overlap in incorrect text. The amendment corrects this error.

The amendment of the paragraph beginning on page 8, line 4, is supported by the data in Table 1.

The amendment to Example 22 in Table 1 is supported on page 9, lines 10-13, in the specification.

Claims 1 and 2 are amended to include the description of Claim 3. Claim 3 is herein canceled.

No new matter will be added to this application by entry of this amendment.

Upon entry of this amendment, Claims 1-2 and 4-17 are active.

REMARKS/ARGUMENTS

The claimed invention provides an aluminum brazing sheet according to Claims 1 and 2 and claims dependent thereon, for the manufacture of parts of automobile radiators, including the header and the side plate.

Applicants respectfully note that Claims 1 and 2 are herein amended to describe an aluminum brazing sheet consisting of: 1) a core material made of an aluminum alloy; 2) a cladding material cladded on at least one side of the core material and made of an aluminum alloy having a potential lower than that of the core material, and 3) a brazing material laminated on the side of the core material opposite to the cladding material.

The rejection of Claims 1-5, 7-12 and 17 under 35 U.S.C. 102(b) or in the alternative under 35 U.S.C 103(a) over Doyle (U.S. 3,310,389) is respectfully traversed.

Doyle describes an aluminum alloy sheet intended to withstand high temperatures which are used for example for the skins of aircraft intended to fly at supersonic speeds (Col. 1, lines 10-20). The aluminum sheet may be used in the unclad form or may be clad on one or both main faces with a layer of aluminum or an aluminum alloy (Col. 1, lines 21-25). Nowhere does this reference disclose or suggest an aluminum sheet with a brazing material laminated on the side of the core material opposite to the cladding material.

Applicants respectfully call the Examiner's attention to *In re Arkley*, 455 F.2d 586, 587, 172 USPQ 524, 526 (CCPA 1972) which states:

> "[R]ejections under 35 U.S.C. 102 are proper only when the claimed subject matter is identically disclosed or described in "the prior art." Thus for the instant rejection under 35 U.S.C. [102(b)] to have been proper, the . . . reference must clearly and unequivocally disclose the claimed [subject matter] or direct those skilled in the art to the [subject matter] . . ."

In view of the above, Applicants respectfully submit that the cited reference cannot anticipate the present invention as now claimed.

Applicants respectfully note that one of ordinary skill in the art would recognize that the aluminum alloy core described by Doyle (Col. 3, lines 29-45) having a high copper (2.2 to 2.7 wt.%) and magnesium (1.3 to 1.7 wt.%) would constitute a material having a solidus temperature of approximately 570°C or less.

In contrast, in the present invention the use of JIS4045 (page 7, line 11) which has a solidus temperature of 577°C or higher is described. Therefore when exposed to brazing conditions such as 600°C for five minutes (page 7, lines 23-25), the core of the claimed brazing sheet would not melt. In contrast the core material described by Doyle having the lower solidus temperature would melt during brazing heating and therefore would not be suitable for such purpose.

Moreover, review of the supplementary experimental data provided in the attached Declaration under 36 C.F.R. § 1.132, by Mr. Toshiki Ueda, an inventor in this application, shows the significant improvement in Post brazing strength obtained when the claimed composition is employed. Applicants particularly point to the following Table of data constructed with original data from Table 1 and the data provided in the attached Declaration. In the Table, the Examples are according to the claimed composition with respect to Si, Mn, and Zn. The effect of the claimed composition range for Mg is demonstrated.

Example	Mg	Post Brazing Strength (MPa)
10	0.50	163
2	0.50	163
1	0.52	169
8	0.56	167
4	0.59	165
9	0.6	168
11	0.6	169
5	0.7	171

Applicants submit that the above data, as well as the all the data provided in Table 1 and the attached Declaration show that the post-brazing strength of the sheet is significantly improved when the Mg content is in the range as claimed in the present invention. Doyle is not concerned with this problem, does not recognize the importance of the specific content and does not provide motivation that would have led one of ordinary skill in the art, at the time of the present invention to the claimed composition.

The MPEP § 2144.05 I. states:

> However, if the reference's disclosed range is so broad as to encompass a very large number of possible distinct compositions, this might present a situation analogous to the obviousness of a species when the prior art broadly discloses a genus.

The MPEP further references *In re Baird*, 16 F.3d 380, 29 USPQ2d 1550 (Fed. Cir. 1994) which states:

> Given the vast number of diphenols encompassed by the generic diphenol formula in Knapp, and the fact that the diphenols that Knapp specifically discloses to be "typical," "preferred," and "optimum" are different from and more complex than bisphenol A, we conclude that Knapp does not teach or fairly suggest the selection of bisphenol A. See *In re Belle* 991 F.2d 781, 26 USPQ2d 1529 (Fed. Cir. 1993) (DNA sequence would not have been obvious in view of prior art reference suggesting a nearly infinite number of possibilities and failing to suggest why among all those possibilities one would seek the claimed sequence). A disclosure of millions of compounds does not render obvious a claim to three compounds, particularly when that disclosure indicates a preference leading away from the claimed compounds.

Applicants respectfully submit that Doyle describes a range of magnesium content from 0.4 to 1.4 wt% which is very broad in comparison to the claimed range of 0.52 to 0.7 and does not disclose, suggest or recognize the possibility of improved post brazing strength obtained with the claimed range. Therefore, in view of all the above, Applicants submit that the cited reference cannot render the claimed invention obvious.

As the cited reference neither anticipates nor renders the claimed invention obvious, withdrawal of the rejection of Claims 1-5, 7-12 and 17 under 35 U.S.C. 102(b) or in the alternative under 35 U.S.C 103(a) over Doyle (U.S. 3,310,389) is respectfully requested.

The rejection of Claims 1-17 under 35 U.S.C. 103(a) over Syslak et al. (WO 02/090031) is respectfully traversed.

Syslak describes a brazing sheet for a heat exchanger, with a core material of an aluminum alloy and a brazing aluminum alloy metal clad on at least one side of the core (Claim 1). This reference describes a Mg content of 0.5 wt %, but provides little guidance

with respect the basis for setting the component ranges of the cladding material. This value is described in Col. 3, lines 36-38 and in Table 1 of the reference, none of the Example clad layers appear to meet this composition. They are actually significantly lower than the claimed range (0.01-0.03%). Nowhere does this reference disclose, suggest or provide motivation that would have led one of ordinary skill in the art, at the time of the present invention, to expect the relationship of post brazing strength and magnesium content according to the claimed invention.

The Office has suggested that one of ordinary skill in the art would not expect a difference of 0.02 wt % Mg would lead to a significant difference in performance of the brazing sheet (Official Action dated January 27, 2009, page 5, lines 20-22). Applicants have shown in the data now provided in the attached Declaration and summarily presented in the above Table that the 0.02% difference does result in a difference in post-brazing strength. As shown by Examples 1, 2 and 10, the 0.02% difference results in a nearly 4% increase in post-brazing strength.

Applicants respectfully submit that the Office's contention actually shows the results shown to be unexpected and therefore patentable.

Applicants have described the importance of the cladding layer composition as follows:

> "In such a cladding material conventionally employed, a large amount of Mg has been added to improve the strength. However, in the present invention, the amount of Mg added to a cladding material is significantly reduced to 0.7 mass% or less, and the reduction in the strength due to the reduction in the added amount of Mg is complemented by the addition of Si and Mn. **Since the added amount of Mg is small, the generation of pressure adhesion failure such as a blister may be prevented upon laminating the core material and the cladding material through rolling working. In this manner, the high strength and high productivity of an aluminum brazing sheet can be implemented by reducing the added amount of Mg and by the addition of Si and Mn.**"(page 4, lines 6-18)(Bold added)

Applicants again respectfully submit that Syslak does not disclose or suggest the alloy compositions, in total combination, as in of Claims 1 and 2 of the present invention which contains from 0.52 to 0.7 mass% Mg, 0.5 to 1.5 mass % Si and 0.4 to 1.2% Mn. In contrast, Syslak allows for no Si or Si up to 1.2%. This reference does not disclose or suggest reduction of pressure adhesion failure as described by Applicants in Table 1 and in the supplementary data provided in the attached declaration.

Applicants respectfully submit that the performance results according to the claimed invention is neither disclosed nor suggested by the cited reference and therefore, this reference cannot render the presently claimed invention obvious. Withdrawal of the rejection of Claims 1-17 under 35 U.S.C. 103(a) over Syslak et al. is respectfully requested.

Applicants respectfully submit that the above-identified application is now in condition for allowance and early notice of such action is earnestly solicited.

Respectfully submitted,

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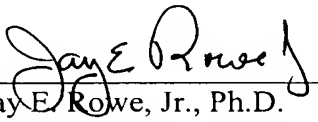

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